

Name:

Solutions

1. Simplify $\frac{10x+5}{5} = 2x+1$

2. Simplify $\frac{10x+5}{15} = \frac{2x+1}{3}$ or $\frac{2}{3}x + \frac{1}{3}$

3. Simplify $\frac{9x^2-4}{3x-2} = \frac{(3x-2)(3x+2)}{3x-2} = 3x+2$

4. Simplify $\frac{x-5}{5-x} = -1$ because $x-5$ & $5-x$ are opposites

5. Simplify $\frac{x^2-16}{x^2-8x+16} = \frac{(x-4)(x+4)}{(x-4)(x-4)} = \frac{x+4}{x-4}$

6. Simplify $\frac{x^3-8}{x-2} = \frac{(x-2)(x^2+2x+4)}{x-2} = x^2+2x+4$

7. Simplify $\frac{3x+4}{x-5} \times \frac{x+5}{3x+4} = \frac{x+5}{x-5}$

8. Simplify $\frac{x^2+5x-14}{x^2-7x+10} \times \frac{x^2-2x-15}{x^2+10x+21} = \frac{\cancel{(x+7)} \cancel{(x-2)}}{\cancel{(x-2)} \cancel{(x-5)}} \cdot \frac{\cancel{(x-5)} \cancel{(x+3)}}{\cancel{(x+3)} \cancel{(x+7)}} = 1$

9. Simplify $\frac{x^2-16}{x^2-13x+40} \div \frac{x^2+8x+16}{x^2-x-20} = \frac{(x-4) \cancel{(x+4)}}{\cancel{(x-5)} (x-8)} \cdot \frac{\cancel{(x-5)} \cancel{(x+4)}}{(x+4) \cancel{(x+4)}} = \frac{(x-4)}{(x-8)}$

10. State all restrictions on x $\frac{x^2+8x+16}{x+5}$

Denominators cannot be zero
therefore $x \neq -5$

11. State all restrictions on x $\frac{x^2-49}{4x^2-25} = \frac{x^2-49}{(2x-5)(2x+5)}$

$x \neq \frac{5}{2}$
 $x \neq -\frac{5}{2}$